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## THE LICHEN-FLORA OF FLORIDA.

### Catalogue of Species, with Notes, and also Notices of New Species.

BY JOHN W. ECKFELDT, M. D., PHILADELPHIA, AND W. W. CALKINS, CHICAGO.

The authors have undertaken the present paper in the belief that the facts and material in their possession should be published for the benefit of lichenists generally and as a contribution to our knowledge in a little-explored field as regards the subject under consideration. True, numerous collectors have been over the ground and have been well rewarded; but, after all, each additional research brings to light new or rare species and demonstrates that all of us have as yet merely skirmished on the line. The finding of four or five new species during the past winter by one of the authors, within a space less than ten feet square, only shows what to expect in the future, if proper efforts are made. The authors give herein no species not properly verified as being found in Florida, and, indeed, a large proportion are the results of personal collections. The determination has been entirely by the senior author, Dr. Eckfeldt, who, in doubtful or difficult cases, was so fortunate as to secure the valuable assistance of Dr. W. Nylander, of Paris. The new species were determined by the latter well-known lichenist, and, if possible, full descriptions of these will be given. The number enumerated may seem large, and yet we venture to say that in time it will be increased one third or more. The geographical position of Florida, her physical relations past and present to the West Indies and the Antillean system; her climate and soil, as well as parallels of distribution found in her phenogamic botany, warrant our belief. The order of arrangement of the list will be that after Tuckerman (*Genera Lichenum*) and recent writers on special genera in Lichenology.

#### PARMELIACEI.

##### USNEEI.

RAMALINA ACH., De Not.

1. R. USNEOIDES (Ach.) Fr.—Infrequent; on old trunks. Herb. Austin, Lichens of Florida.
2. R. RIGIDA (Psre.)—On old trunks; frequent.
3. R. RIGIDA, var. MONTAGNEI, Tuck.—On old trunks. S. Fla.

4. *R. STENOSPORA*, Mull.—On old trunks. Westward along the Gulf.

5. *R. COMPLANATA* (Sw.) Ach. Westward to Mexico.

6. *R. CALICARIS* (L.) Fr.—Small forms; found on trunks.

*CETRARIA* (Ach.) Fr. Mull.

7. *C. CILIARIS* (Ach.)—On dead wood near Palatka.

*EVERNIA* (Ach.) Mann.

8. *E. FURFURACEA* (L.) Mann.—Infrequent.

*USNEA* (Dill.) Ach.

9. *U. BARBATA* (L.) Ach.—Abundant on various trees.

10. *U. BARBATA*, var. *FLORIDA*, Fr.—Very common.

11. *U. BARBATA*, var. *CERATINA*, Schaer.—Frequent.

12. *U. ANGULATA* (Ach.)—On old trees; not fertile.

#### PARMELIEI.

*THELOSCHISTES*, Norm. emend.

13. *U. TRICHODEA*, Ach.—Herb. Schweinitz.

14. *T. CONCOLOR* (Dicks.)—Abundant on various trees.

15. *T. CHRYSOPHTHALMUS* (L.) Norm.—On old trees.

16. *T. FLAVICANS*, Wallr.—Common on old trees.

17. *T. LYCHNEUS* (Nyl.)—Occasional.

*PARMELIA* (Ach.)—De Not.

18. *P. PERFORATA* (Jacq.) Ach.—Very abundant on oaks.

19. *P. TILICEA* (Hoffm.) Floerk.—Common on various trees.

20. *P. CAPERATA* (L.) Ach.—On trunks, dead wood, etc.

21. *P. LATISSIMA*, Fee.—On smooth trunks.

22. *P. CETRATA*, Ach.—Common.

23. *P. CRINITA*, Ach.—Common.

24. *P. LÆVIGATA* (Sm.) Nyl.—Common.

25. *P. TILIACEA*, var. *SULPHUROSA*, Tuck.—Frequent on old trunks.

26. *P. BORRERA*, Turn.—Northern portions of the state; on trunks; fertile.

27. *P. BORRERA*, var. *RUDECTA*, Tuck.—Frequent on various barks.

28. *P. COLPODES*, Ach. Nyl.—A common lichen; frequently infertile.

29. *P. LEUCOCHLORA*, Tuck.

30. *P. CONSPERSA* (Ehrh.)—Ach.

*PHYSICIA* (D. C., Fr.) Th. Fr.

31. *P. PULVERULENTA* (Schreb.) Nyl.—On *Ficus* and *Quercus*.

32. *P. STELLARIS* (L.)—Common.

33. *P. HYPOLEUCA* (Muhl.) Tuck.

34. *P. RAVENELII*, Tuck.

35. *P. AQUILA* (Ach.) Nyl.

36. *P. AQUILA*, var. *DETONSA*, Tuck.

37. *P. ASTROIDEA* (Fr.) Nyl.

38. *P. CRISPA* (Pers.) Nyl., Herb. Ravenel.

39. *P. TRIBACEA* (Ach.) Tuck.

40. *P. OBSCURA* (Ehrh.) Nyl.

41. *P. ADGLUTINATA* (Fl.) Nyl.

*PYXINE*, Fr.—Tuck.

42. *P. PICTA* (Sw.) Tuck.—Abundant.  
43. *P. SOREDIATA*, Fr.—On *Ficus* and *Sabal*.

## PELTIGEREI.

STICTA (Schreb.) Fr.

44. *S. AURATA* (Sm.) Ach.—On *Magnolias*, etc.  
45. *S. CROCATA* (L.) Ach.  
46. *S. EROSA* (Eschw.) Herb. Austin.

NEPHROMA, Ach.

47. *N. HELVETICUM*, Ach.

PELTIGERA (Willd. Hoffm.) Fee.

48. *P. POLYDACTYLA* (Neck.) Hoffm.—Common westward to Louisiana.

## PANNARIEI.

PHYSMA, Mass.

49. *P. LURIDUM* (Mont.)—On *Andromeda*.

PANNARIA, Delis.

50. *P. RUBIGINOSA* (Thunb.) Delis.—On *Andromeda*; abundant.  
51. *P. MOLYBDÆA* (Pers.) Tuck.—Not common. Herb. Ravenel, Calkins & Eckfeldt.

52. *P. STELLATA* (Tuck.) Nyl.—Abundant on *Carpinus*. Calkins.

53. *P. PANNOSA* (Sw.) Delis.—Infertile; introduced from the tropics.

54. *P. LEUCOSTICTA*, Tuck.

## COLLEMEI.

COLEMA, Hoffm. & Fr.

55. *C. AGGREGATUM*, Nyl.—Abundant on various shrubs; also in Cuba and Central America.

56. *C. NIGRESCENS* (Huds.) Ach.—Common; has a wide range.

57. *C. PYCNOCARPUM*, Nyl.

58. *C. CYRTASPIS*, Tuck.

59. *C. CALLIBOTRYS*, Tuck.

60. *C. LEPTALEUM*, Tuck.

61. *C. FLACCIDUM*, Ach.

LEPTOGIUM, Fr. & Ach.

62. *L. TREMELLOIDES* (L. fil.) Fr.—Abundant. Calkins, Herb. Austin.

63. *L. DENDRISCUM*, Nyl.—Herb. Eckfeldt.

64. *L. ALBOCILIATUM*, Desmaz.—Upon mosses in swamps.

65. *L. PULCHELLUM* (Ach.) Nyl.

66. *L. FOVEOLATUM*, Nyl.—Very closely related to No. 65.

67. *L. MARGINELLUM* (Sw.) Herb. Ravenel.

68. *L. CHLOROMELUM* (Sw.) Nyl.

69. *L. BULLATUM* (Ach.) Mont.—On old trees. Her. Austin.

70. *L. MYOCHROUM* (Ehrh.) Tuck.—In low places.

## LECANOREI.

PLACODIUM (DC.) Naeg. & Hepp.

71. *P. CINNABARINUM* (Ach.) Anz.

72. *P. AURANTIACUM*, Lightf. Naeg. & Hepp.
73. *P. CERINUM* (Hedw.) Naeg. & Hepp.
74. *P. FERRUGINEUM* (Huds.) Hepp.
75. *P. CAMPTIDIUM*, Tuck.
76. *P. FLORIDANUM*, Tuck.
77. *P. VITELLINUM* (Ehrh.) Naeg. & Hepp.
- LECANORA, Ach., Tuck.
78. *L. PUNICEA*, Ach.—Very abundant on various trees.
79. *L. PALLESCENS* (L.) Schaer.—On hickory, *Ilex*, etc.
80. *L. VARIA* (Ehrh.) Nyl.—On *Castanea*, etc.
81. *L. PALLIDA* (Schreb.) Schaer.—Very fine; abundant.
82. *L. PALLADA*, var. *CANCRIFORMIS*, Tuck.—Abundant. *L. cæsius rubella* of Nylander.
83. *L. SUBFUSCA*, Ach.—Common.
84. *L. SUBFUSCA*, var. *DISTANS*, Ach.—Smaller and paler than the preceding species.
85. *L. ATRA* (Huds.) Ach.—Very common.
86. *L. CUPRESSI*, Tuck., *in litt.*—Very common on *Taxodium*. By some considered a variety of *L. varia*; quite distinct.
87. *L. MICULATA*, Ach.
88. *L. HAGENI*, Ach.
89. *L. GRANIFERA*, Ach.
90. *L. CINEREA* (L.) Somm.
91. *L. XANTHOPANA*, Nyl.
92. *L. FUSCATA* (Schrad.) Th. Fr.
93. *L. PRIVIGNA* (Ach.) Nyl.
- RINODINA, Mass.—Stizenz, Tuck.
94. *R. CHRYSOMELÆNA* (Ach.) Tuck.
95. *R. SOPHODES* (Ach.) Tuck.
96. *R. FLAVA-NIGELLA*, Tuck.
97. *R. CONSTANS* (Nyl.) Tuck.
- PERTUSARIA, DC.
98. *P. VELATA* (Turn.) Nyl.—Common on *Quercus*.
99. *P. MULTIPUNCTATA* (Turn.) Nyl.—Large and fine; on *Ilex*.
100. *P. COMMUNIS*, DC.—*Porina pertusa* (L.) Ach., is a synonym; common.
101. *P. LEOPLACA* (Ach.) Schaer.—Abundant; might be mistaken for *P. Wulfenii*, but the color is lighter.
102. *P. PUSTULATA* (Ach.) Nyl.—Quite distinct from others in the form of the apothecia; color variable also.
103. *P. WULFENII*, DC.—A marked species, suggesting in appearance *Thelotrema* (Syn. *Thelo. hymenium*, Turn. & Borr.) Allied to *P. leioplaca*, but the spores are eight in the thekes.
- CONOTREMA, Tuck.
104. *C. URCEOLATUM* (Ach.) Tuck.
- GYALECTA (Ach.) Anzi.
105. *G. LUTEA* (Dicks.) Tuck.

106. *G. PINETI* (Schrad.) Tuck.—On old *Polyporus*.  
*URCEOLARIA*, Ach. Fl.
107. *U. SCRUPOSA* (L.) Nyl.—Does not appear to be common in Florida. Have only found it on *Carpinus Caroliniana* (Calkins).
108. *U. ACTINOSTOMA*, Pers.—Occasional.
- THELOTREMA* (Ach.) Eschw.
109. *T. SUBTILE*, Tuck.—Abundant on *Carpinus* (Calkins).
110. *T. DOMINGENSE* (Fee., Nyl.) Tuck.—Common on *Ulmus* (Calkins); of tropical derivation.
111. *T. DOMINGENSE*, var. *RHODOSTROMA*, Nyl.—An elegant species; found on *Carpinus* (Calkins, Austin).
112. *T. LEPADINUM*, Ach.—On *Persea*; not common.
113. *T. LEPROCARPUM* (Nyl.) Tuck.—Not common.
114. *T. GLAUDESCENS*, Nyl.—Rare on old logs; also in Cuba.
115. *T. LEPADODES*, Nyl.—On various trees.
116. *T. MICROPORUM* (Mont.) Herb. Ravenel.
117. *T. LATHRAEUM*, Tuck., Herb. Austin.
118. *T. GRANULOSUM*, Tuck., Herb. Austin.
119. *T. AUBERIANUM*, Mont., Herb. Austin.
120. *T. WRIGHTII* (Tayl.) Nyl.
121. *L. RAVENELII* (Tuck.) Nyl.
- GROSTOMUM*, Fr. *GYROSTOMUM*.
122. *G. SCYPHULIFERUM* (Ach.) Fr.—Very common.
- MYRIANGIUM*, M. & B.
123. *M. DURLÆI* (M. & B.) Tuck.—Common in Cuba also. *M. Curtisii*, M. & B., is the same.

## LECIDEACEI.

## CLADONIEI.

- CLADONIA*, Hoffm.
124. *C. SYMPHYCARPA*, Fr.—Common on earth.
125. *C. MITRULA*, Tuck.—Abundant on old logs and damp earth.
126. *C. PYXIDATA* (L.) Fr.
127. *C. PYXIDATA*, var. *POCILLUM*, Ach.—On earth.
128. *C. SQUARROSA*, Hoffm.
129. *C. FIMBRIATA* (L.) Fr.—Common.
130. *C. FIMBRIATA*, var. *TUBÆFORMIS*, Fr.
131. *C. GRACILIS* (L.) Nyl.
132. *C. GRACILIS*, var. *VERTICELLATA*, Fr. (*Cenomyce Floridanum*, Herb. Schw.
133. *C. PAPILLARIA* (Ehrh.) Hoffm.
134. *C. SANTENSIS*, Tuck.—On earth.
135. *C. FURCATA* (Huds.) Fr.
136. *C. FURCATA*, var. *RACEMOSA*, Fl.
137. *C. FURCATA*, var. *SUBULATA*, Fl.
138. *C. RANGIFERINA* (L.) Hoffm.—On trees and on the ground, forming beautiful tufts, unattached, which are highly prized for decorative purposes. A cosmopolite. We have noticed acres of it on the

mountains of Tennessee and Georgia in masses one foot thick.

139. *C. RANGIFERINA*, var. *SYLVATICA*, L.
140. *C. RAGIFERINA*, var. *ALPESTRIS*, L.
141. *C. UNCIALIS* (L.) Fr.
142. *C. PULCHELLA*, Schw.
143. *C. RAVENELII*, Tuck.
144. *C. CRISTATELLA*, Tuck.
145. *C. LEPORINA*, Fr.

#### CÆNOGONIEI.

CÆNOGONIUM, Ehrh.

146. *C. INTERPOSITUM*, Nyl.—Common; also in Cuba.

(To be continued.)

### TRICOTHECIUM GRISEUM, CK. (PYRICULARIA, SACC.)

My colleague, Dr. Kellerman, finds this in Kansas on a species of *Muhlenbergia* associated with *Phyllachora graminis*, Pers., on the stroma of which it is parasitic (?) or of which, more probably, it constitutes the conidial stage. It does not differ from the normal form on *Panicum* otherwise than in its arising directly from the stroma of the *Phyllachora*. What may also be a form of the same was found on withered leaves of *Paspalum setaceum* growing as before directly from the stroma of the same *Phyllachora* or more or less effused around it, but differing from the form an *Muhlenbergia* in its darker colored (olivaceous hyphæ, often dichotomously branched above, and in its longer, narrower conidia, which are oblong-fusoid, subhyaline, one-septate at first, but finally three-septate,  $25-35 \times 5-7 \mu$ . With these conidia, however, were some which presented very nearly the normal shape, unless a little narrower. We have called this latter form *Tricothecium griseum*, Ck., var. *leptosperma*, E. & K.

J. B. E.

### NEW SPECIES OF FUNGI FROM KANSAS.

BY J. B. ELLIS AND W. A. KELLERMAN

VERMICULARIA CICADINA, E. & K.—On membrane of the wings of dead Cicada. Manhattan, Ks., September, 1887. Kellerman & Swingle, 1087. Perithecia scattered, depressed-hemispherical,  $100-120 \mu$  in diameter, sparingly clothed with erect, spreading, opaque, continuous bristles about  $75 \mu$  long and sub-bulbous at the base; sporules arcuate-fusoid, ends subacute, hyaline, about  $22 \times 2\frac{1}{2} \mu$ , on clavate, oblong-basidia, about  $10 \times 2\frac{1}{2} \mu$ . The fungus is also found, but in an immature condition, on living Cicadæ.

PERONOSPORA LINI, E. & K.—On *Linum sulcatum*. Manhattan, Ks., Sept., 1887. Kellerman & Swingle, 1077. Sparsely scattered on the stems and leaves; conidiophores about half a millim. high, subfastigiate dichotomously branched above, the tips slender and very slightly curved; conidia elliptical, yellowish-brown,  $20-22 \times 11-13 \mu$ . Oospores not seen.